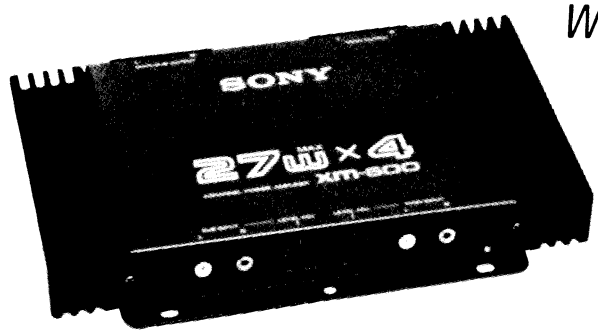
XM-600

SERVICE MANUAL

US Model
Canadian Model
E Model
West Germany Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
14 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20–20,000 Hz with no more than 0.8% total harmonic distortion per Car Stereo Ad Hoc Committee standards.

OTHER SPECIFICATIONS

Circuit system	BTL system
Inputs	Auxiliary inputs (phono jacks) 4
	Remote control input (sure seal connector) 1
Outputs	Speaker outputs (terminals) 8
Speaker impedance	3.2–8 ohms
Frequency response	20–30,000 Hz $^{+0}_{-3}$ dB (4 ohms, 1 W)*
Maximum power output	27 watts per channel minimum RMS at 4 ohms (4 channels driven)
Harmonic distortion	Less than 0.06% (1 kHz, 4 ohms, 1 W)
Power requirements	12 V dc car battery (negative ground)
Current drain	12 A (at maximum output)*
Mounting dimensions	Approx. 240 × 30 × 163 mm (w/h/d) ($9\frac{1}{2} \times 1\frac{3}{16} \times 6\frac{1}{2}$ inches)
Weight	Approx. 1.4 kg (3 lb 1 oz)

*Measured at 14.4 V

Design and specifications subject to change without notice.

FEATURES

4-channel stereo power amplifier for playback with a powerful 4-speaker system (27 W × 4 maximum power output).

- A full 14 watts of power per channel (20–20,000 Hz, 0.8%, 4 ohms, Ad Hoc Committee Standard).
- Low distortion of less than 0.06%.
- The remote power system automatically switches the amplifier on when a connected cassette player or tuner is turned on.

MICROFILM

STEREO POWER AMPLIFIER

SONY®

AUD

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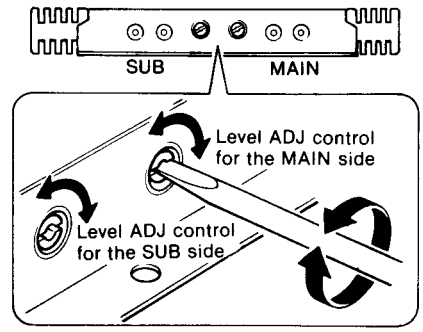
SECTION 1
OUTLINE

LEVEL ADJ (INPUT LEVEL ADJUSTMENT) CONTROLS



With these controls, the MAIN and SUB input levels can be varied independently. Use them to adjust the output sound level when using source equipment of other manufacturers.
The controls are factory-set near MAX for Sony equipment. If necessary, turn the controls toward MIN to decrease the output level of the speaker, using a screwdriver.

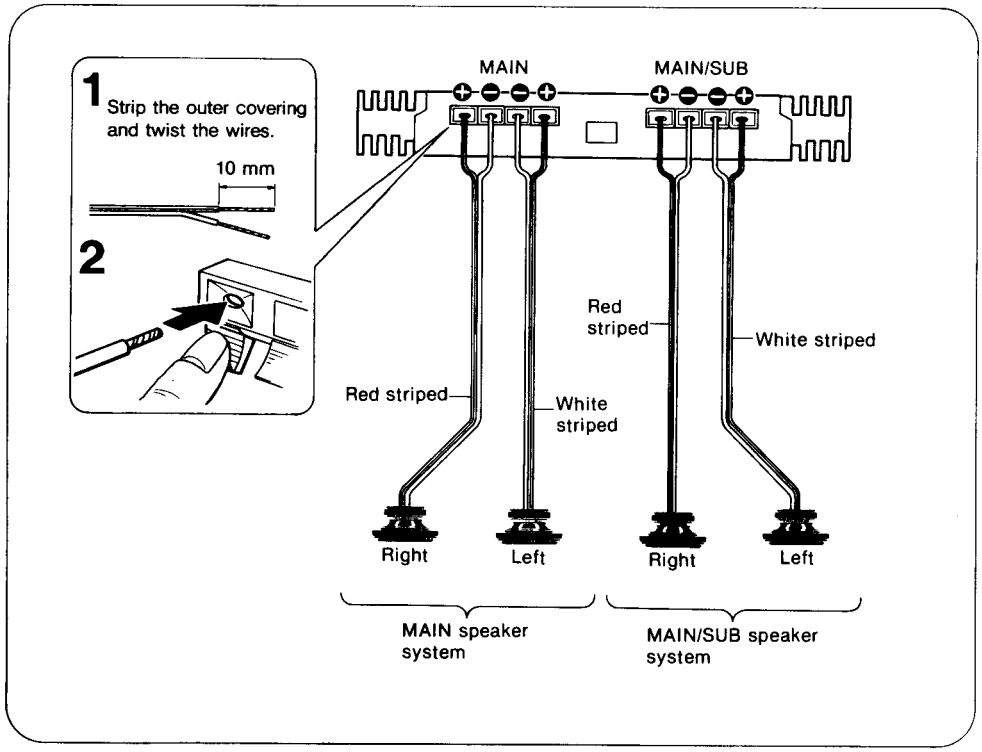
CONNECTIONS

Caution

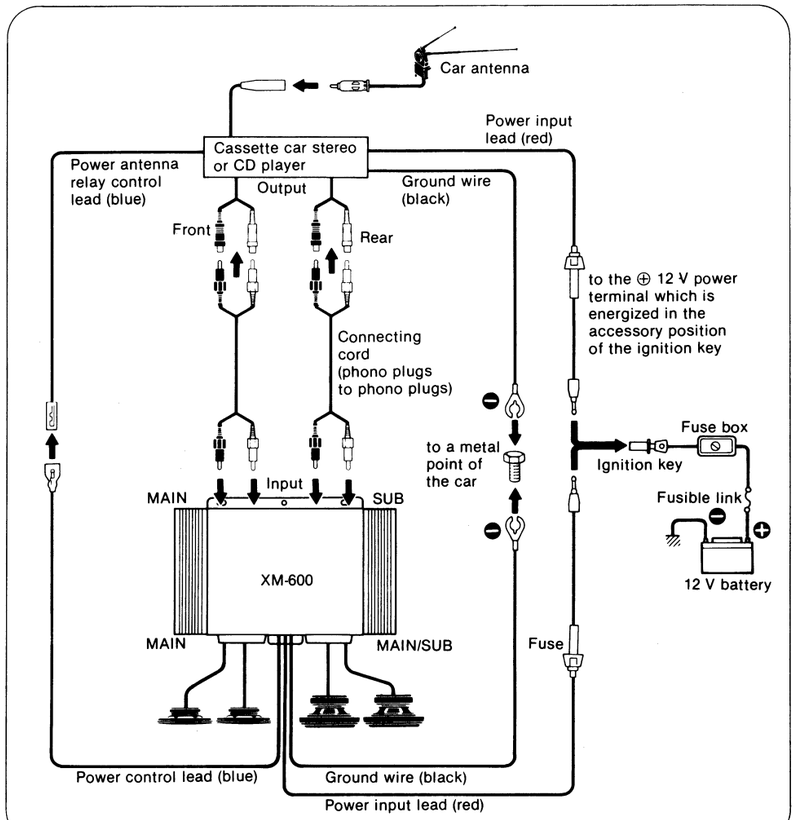
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the red power input lead only after all other leads have been connected.
- Run all ground wires to a common ground point.

SPEAKER CONNECTION

- Since the XM-600 employs the BTL (balanced transformerless) circuit system, be sure to make speaker connections as illustrated.
  If the connection is made through already existing speaker leads which have a common ⊖ lead for both right and left channels, it is possible that the amplifier and the speaker system will be damaged.
- Do not connect the ⊖ terminal of the speaker system with the car chassis, and do not connect the ⊖ terminal of the right speaker with that of the left speaker. Doing so will damage the XM-600.



CONNECTION EXAMPLE



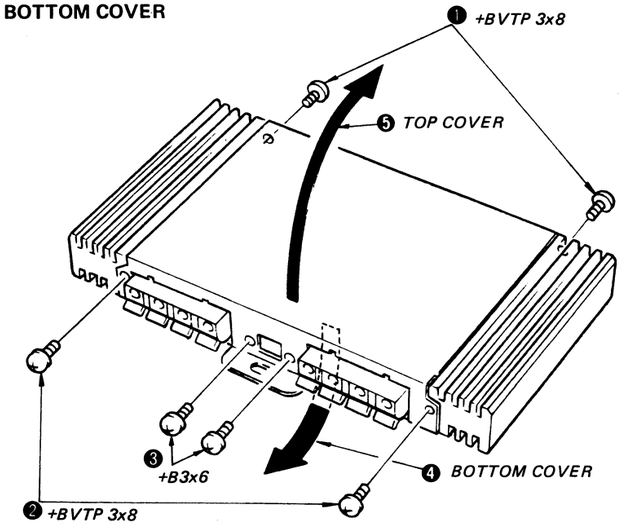
Notes

- 4-speaker system is possible even when using a car stereo equipped with one output connecting cord. In that case, connect the output connecting cord of the car stereo to the MAIN input jacks of the XM-600. The sound will be heard from both front and rear speaker systems.
- The levels of the MAIN speaker system and SUB speaker system can be adjusted with the LEVEL ADJ controls also when connecting the output connecting cord of the car stereo only to the MAIN input jacks of the XM-600.

SECTION 2
DISASSEMBLY

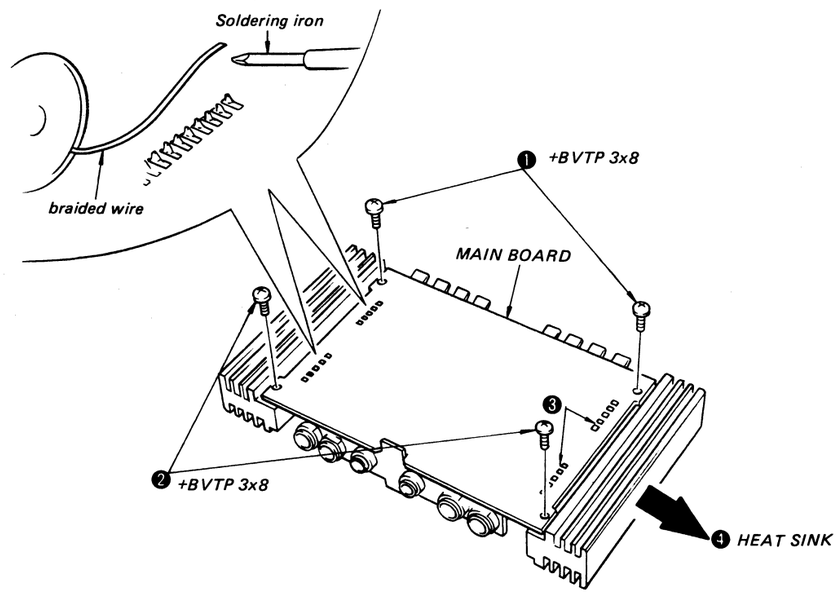
- Follow the disassembly procedure in the numerical order given.

TOP COVER AND BOTTOM COVER



MAIN BOARD

❸ *Removing chip components:*
Remove the solder at the electrode, using a thin braided wire.



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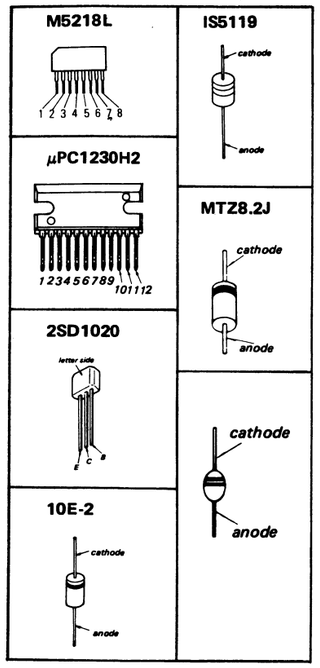
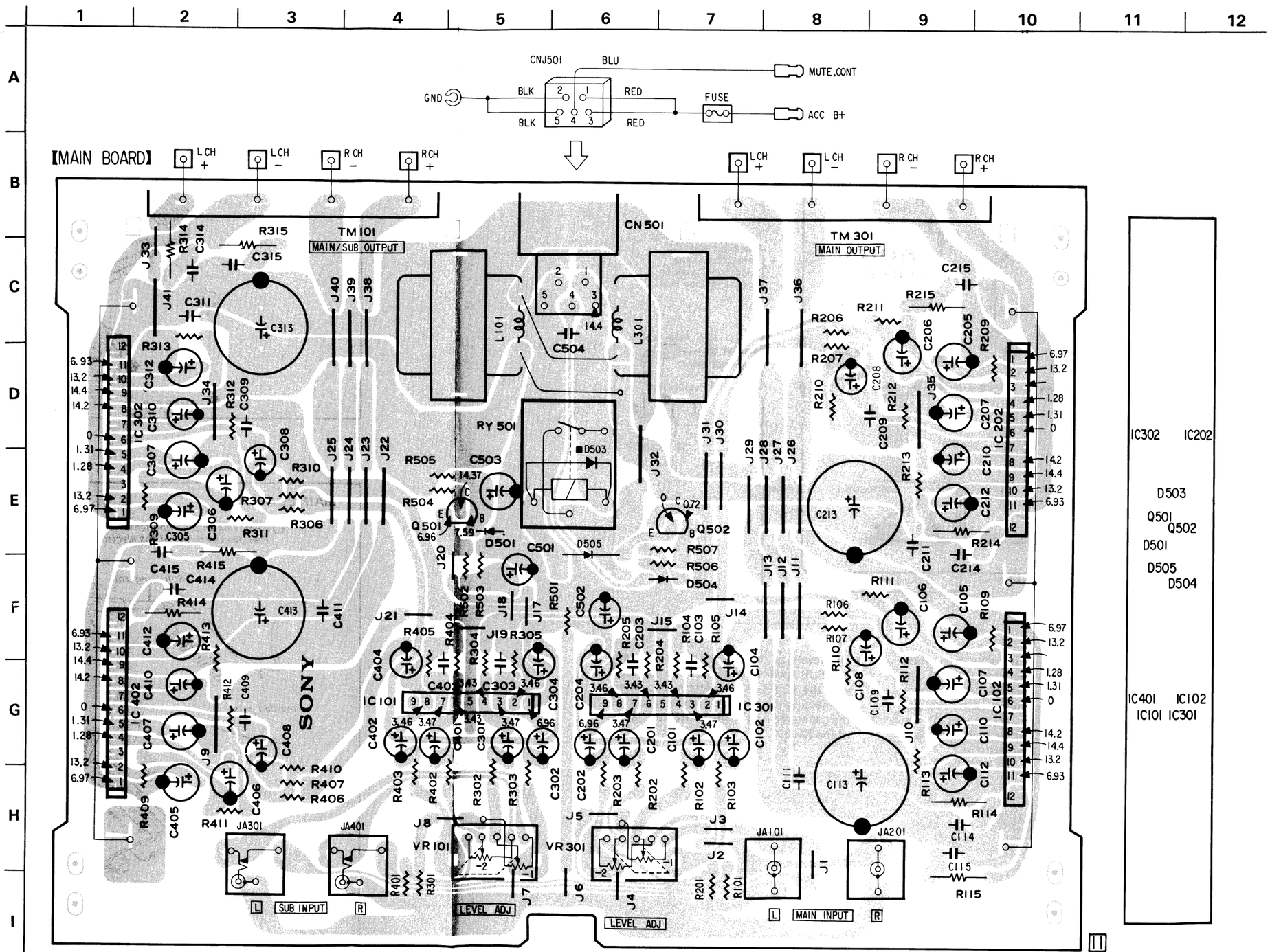
SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM
– Conductor Side –

● **Semiconductor Lead Layouts**



- ○— : parts extracted from the component side.
- ■ : part mounted on the conductor side.



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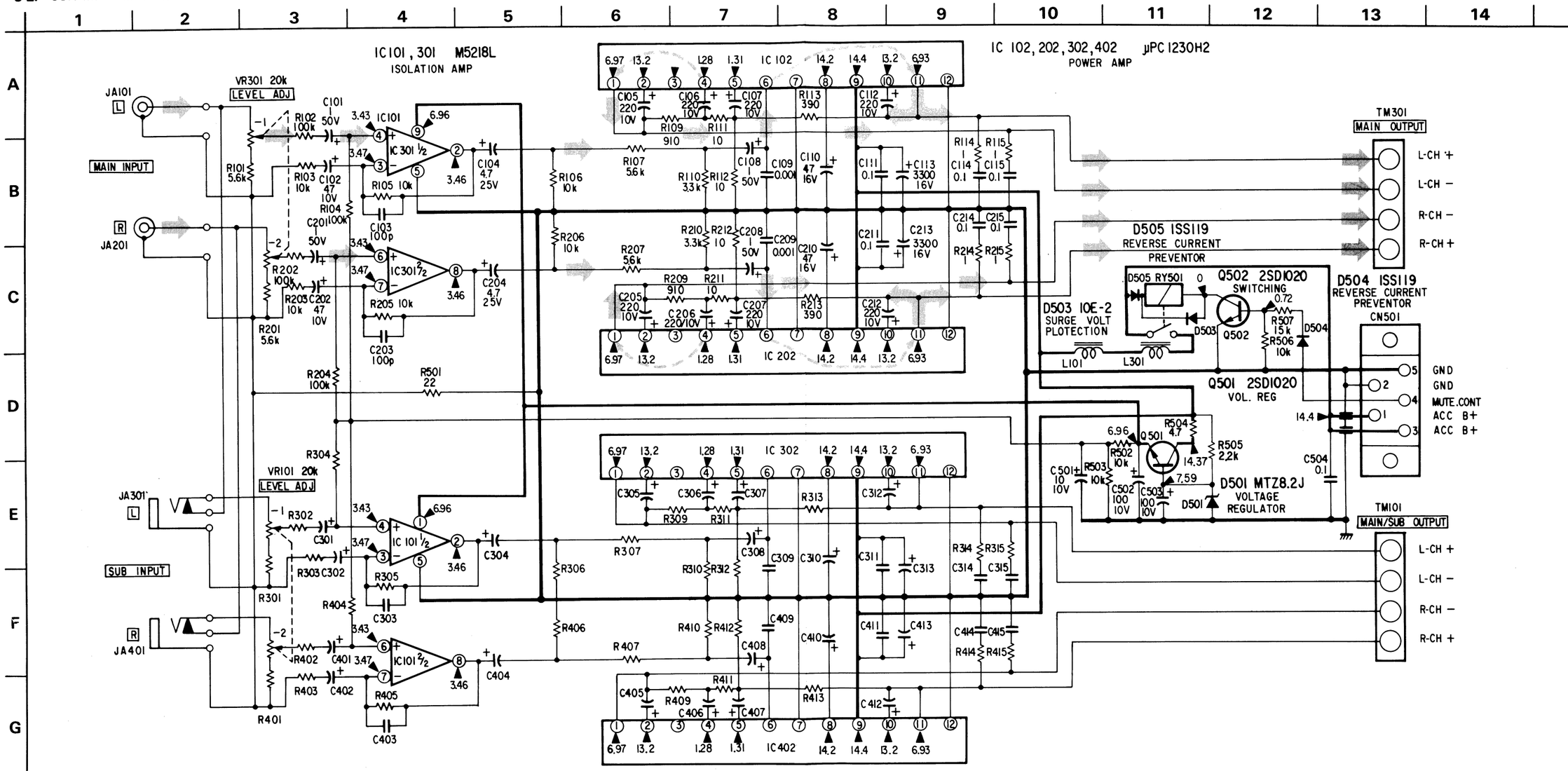
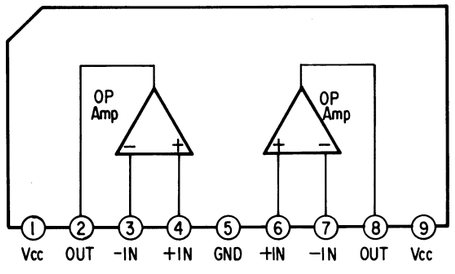
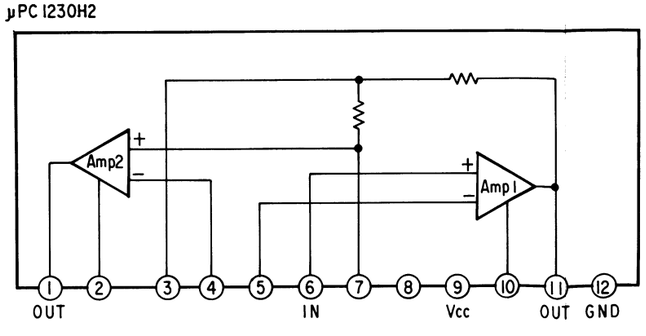
3-2. SCHEMATIC DIAGRAM







Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- ▨: signal path.
- Components for right channel have same values as for left channel. Reference numbers are coded from 301 and 401.
- ▬▬: B+ bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Power voltage is 14.4V and fed with DC power supply from CN501 (1), (3). Voltage are dc with respect to ground in no signal mode.

Note: Voltages are mesured with a VOM (50kΩ/V).

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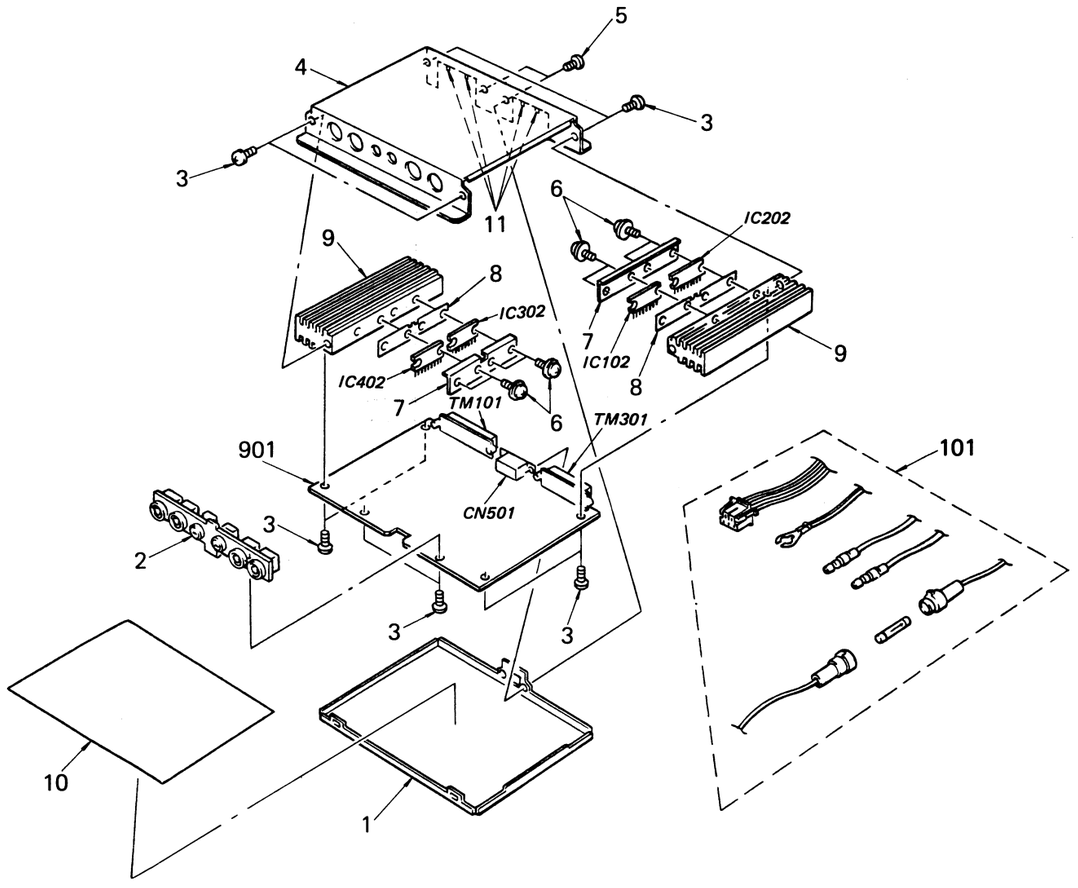
SECTION 4
EXPLODED VIEW AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.



No.	Part No.	Description	Remarks
1	*3-310-676-01	COVER, BOTTOM	
2	*3-310-673-01	PANEL, JACK	
3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
4	3-310-677-01	COVER, TOP	
5	7-682-547-09	SCREW +B 3X6	
6	7-682-950-01	SCREW +PSW 3X12	
7	*3-310-672-01	RETAINER, IC	
8	*3-310-671-01	PLATE, GROUND	
9	*3-310-674-01	HEAT SINK	
10	*3-310-675-01	SHEET, INSULATING	
11	9-911-841-XX	CUSHION (B)	

No.	Part No.	Description	Remarks
101	*1-558-452-11	CORD (WITH CONNECTOR)	
901	*A-3260-364-A	MOUNTED PCB, MAIN	
CN501	*1-506-662-11	CONNECTOR 5P	
IC102	8-759-105-66	IC UPC1230H2	
IC202	8-759-105-66	IC UPC1230H2	
IC302	8-759-105-66	IC UPC1230H2	
IC402	8-759-105-66	IC UPC1230H2	
TM101	1-536-834-11	TERMINAL BOARD (SPEAKER)	
TM301	1-536-834-11	TERMINAL BOARD (SPEAKER)	

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-3260-364-A	MOUNTED PCB, MAIN			
C101	1-123-611-00	ELECT	1MF	20%	50V
C102	1-123-822-00	ELECT	47MF	20%	10V
C103	1-102-106-00	CERAMIC	100PF	10%	50V
C104	1-123-616-00	ELECT	4.7MF	20%	25V
C105	1-124-444-00	ELECT	220MF	20%	10V
C106	1-124-444-00	ELECT	220MF	20%	10V
C107	1-124-444-00	ELECT	220MF	20%	10V
C108	1-123-611-00	ELECT	1MF	20%	50V
C109	1-130-471-00	MYLAR	0.001MF	5%	50V
C110	1-124-445-00	ELECT	100MF	20%	16V
C111	1-130-495-00	MYLAR	0.1MF	5%	50V
C112	1-124-444-00	ELECT	220MF	20%	10V
C113	1-124-887-00	ELECT	3300MF	20%	16V
C114	1-130-495-00	MYLAR	0.1MF	5%	50V
C115	1-130-495-00	MYLAR	0.1MF	5%	50V
C201	1-123-611-00	ELECT	1MF	20%	50V
C202	1-123-822-00	ELECT	47MF	20%	10V
C203	1-102-106-00	CERAMIC	100PF	10%	50V
C204	1-123-616-00	ELECT	4.7MF	20%	25V
C205	1-124-444-00	ELECT	220MF	20%	10V
C206	1-124-444-00	ELECT	220MF	20%	10V
C207	1-124-444-00	ELECT	220MF	20%	10V
C208	1-123-611-00	ELECT	1MF	20%	50V
C209	1-130-471-00	MYLAR	0.001MF	5%	50V
C210	1-123-821-00	ELECT	47MF	20%	16V
C211	1-130-495-00	MYLAR	0.1MF	5%	50V
C212	1-124-444-00	ELECT	220MF	20%	10V
C213	1-124-887-00	ELECT	3300MF	20%	16V
C214	1-130-495-00	MYLAR	0.1MF	5%	50V
C215	1-130-495-00	MYLAR	0.1MF	5%	50V
C301	1-123-611-00	ELECT	1MF	20%	50V
C302	1-123-822-00	ELECT	47MF	20%	10V
C303	1-102-106-00	CERAMIC	100PF	10%	50V
C304	1-123-616-00	ELECT	4.7MF	20%	25V
C305	1-124-444-00	ELECT	220MF	20%	10V
C306	1-124-444-00	ELECT	220MF	20%	10V
C307	1-124-444-00	ELECT	220MF	20%	10V
C308	1-123-611-00	ELECT	1MF	20%	50V
C309	1-130-471-00	MYLAR	0.001MF	5%	50V
C310	1-123-821-00	ELECT	47MF	20%	16V
C311	1-130-495-00	MYLAR	0.1MF	5%	50V
C312	1-124-444-00	ELECT	220MF	20%	10V
C313	1-124-887-00	ELECT	3300MF	20%	16V
C314	1-130-495-00	MYLAR	0.1MF	5%	50V
C315	1-130-495-00	MYLAR	0.1MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C401	1-123-611-00	ELECT	1MF	20%	50V
C402	1-123-822-00	ELECT	47MF	20%	10V
C403	1-102-106-00	CERAMIC	100PF	10%	50V
C404	1-123-616-00	ELECT	4.7MF	20%	25V
C405	1-124-444-00	ELECT	220MF	20%	10V
C406	1-124-444-00	ELECT	220MF	20%	10V
C407	1-124-444-00	ELECT	220MF	20%	10V
C408	1-123-611-00	ELECT	1MF	20%	50V
C409	1-130-471-00	MYLAR	0.001MF	5%	50V
C410	1-123-821-00	ELECT	47MF	20%	16V
C411	1-130-495-00	MYLAR	0.1MF	5%	50V
C412	1-124-444-00	ELECT	220MF	20%	10V
C413	1-124-887-00	ELECT	3300MF	20%	16V
C414	1-130-495-00	MYLAR	0.1MF	5%	50V
C415	1-130-495-00	MYLAR	0.1MF	5%	50V
C501	1-123-617-00	ELECT	10MF	20%	16V
C502	1-124-443-00	ELECT	100MF	20%	10V
C503	1-124-443-00	ELECT	100MF	20%	10V
C504	1-130-495-00	MYLAR	0.1MF	5%	50V
CN501	*1-506-662-11	CONNECTOR 5P			
D501	8-719-921-65	DIODE MTZ8.2J			
D503	8-719-200-02	DIODE 10E-2			
D504	8-719-911-19	DIODE 1SS119			
D505	8-719-911-19	DIODE 1SS119			
IC101	8-759-600-02	IC M5218L			
IC102	8-759-105-66	IC UPC1230H2			
IC202	8-759-105-66	IC UPC1230H2			
IC301	8-759-600-02	IC M5218L			
IC302	8-759-105-66	IC UPC1230H2			
IC402	8-759-105-66	IC UPC1230H2			
JA101	1-563-068-11	JACK, PIN 1P			
JA201	1-563-068-21	JACK, PIN 1P			
JA301	1-563-067-11	JACK, PIN 1P			
JA401	1-563-067-21	JACK, PIN 1P			
L101	1-421-369-00	COIL, CHOKE			
L301	1-421-369-00	COIL, CHOKE			
Q501	8-729-102-03	TRANSISTOR 2SD1020			
Q502	8-729-102-03	TRANSISTOR 2SD1020			
R101	1-247-849-00	CARBON	5.6K	5%	1/6W
R102	1-247-879-00	CARBON	100K	5%	1/6W
R103	1-249-429-11	CARBON	10K	5%	1/6W
R104	1-247-879-00	CARBON	100K	5%	1/6W
R105	1-249-429-11	CARBON	10K	5%	1/6W
R106	1-249-429-11	CARBON	10K	5%	1/6W
R107	1-247-849-00	CARBON	5.6K	5%	1/6W
R109	1-247-830-00	CARBON	910	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R110	1-247-843-00	CARBON	3.3K	5%	1/6W
R111	1-247-783-00	CARBON	10	5%	1/6W
R112	1-247-783-00	CARBON	10	5%	1/6W
R113	1-247-821-00	CARBON	390	5%	1/6W
R114	1-249-447-11	CARBON	1	5%	1/4W
R115	1-249-447-11	CARBON	1	5%	1/4W
R201	1-247-849-00	CARBON	5.6K	5%	1/6W
R202	1-247-879-00	CARBON	100K	5%	1/6W
R203	1-249-429-11	CARBON	10K	5%	1/6W
R204	1-247-879-00	CARBON	100K	5%	1/6W
R205	1-249-429-11	CARBON	10K	5%	1/6W
R206	1-249-429-11	CARBON	10K	5%	1/6W
R207	1-247-849-00	CARBON	5.6K	5%	1/6W
R209	1-247-830-00	CARBON	910	5%	1/6W
R210	1-247-843-00	CARBON	3.3K	5%	1/6W
R211	1-247-783-00	CARBON	10	5%	1/6W
R212	1-247-783-00	CARBON	10	5%	1/6W
R213	1-247-821-00	CARBON	390	5%	1/6W
R214	1-249-447-11	CARBON	1	5%	1/4W
R215	1-249-447-11	CARBON	1	5%	1/4W
R301	1-247-849-00	CARBON	5.6K	5%	1/6W
R302	1-247-879-00	CARBON	100K	5%	1/6W
R303	1-249-429-11	CARBON	10K	5%	1/6W
R304	1-247-879-00	CARBON	100K	5%	1/6W
R305	1-249-429-11	CARBON	10K	5%	1/6W
R306	1-249-429-11	CARBON	10K	5%	1/6W
R307	1-247-849-00	CARBON	5.6K	5%	1/6W
R309	1-247-830-00	CARBON	910	5%	1/6W
R310	1-247-843-00	CARBON	3.3K	5%	1/6W
R311	1-247-783-00	CARBON	10	5%	1/6W
R312	1-247-783-00	CARBON	10	5%	1/6W
R313	1-247-821-00	CARBON	390	5%	1/6W
R314	1-249-447-11	CARBON	1	5%	1/4W
R315	1-249-447-11	CARBON	1	5%	1/4W
R401	1-247-849-00	CARBON	5.6K	5%	1/6W
R402	1-247-879-00	CARBON	100K	5%	1/6W
R403	1-249-429-11	CARBON	10K	5%	1/6W
R404	1-247-879-00	CARBON	100K	5%	1/6W
R405	1-249-429-11	CARBON	10K	5%	1/6W
R406	1-249-429-11	CARBON	10K	5%	1/6W
R407	1-247-849-00	CARBON	5.6K	5%	1/6W
R409	1-247-830-00	CARBON	910	5%	1/6W
R410	1-247-843-00	CARBON	3.3K	5%	1/6W
R411	1-247-783-00	CARBON	10	5%	1/6W
R412	1-247-783-00	CARBON	10	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R413	1-247-821-00	CARBON	390	5%	1/6W
R414	1-249-447-11	CARBON	1	5%	1/4W
R415	1-249-447-11	CARBON	1	5%	1/4W
R501	1-244-833-00	CARBON	22		1/2W
R502	1-249-429-11	CARBON	10K	5%	1/6W
R503	1-249-429-11	CARBON	10K	5%	1/6W
R504	1-247-775-00	CARBON	4.7	5%	1/6W
R505	1-249-421-11	CARBON	2.2K	5%	1/6W
R506	1-249-429-11	CARBON	10K	5%	1/6W
R507	1-247-859-00	CARBON	15K	5%	1/6W
RY501	1-515-607-11	RELAY			
TM101	1-536-834-11	TERMINAL BOARD (SPEAKER)			
TM301	1-536-834-11	TERMINAL BOARD (SPEAKER)			
VR101	1-230-640-11	RES, VAR, CARBON 20K/20K			
VR301	1-230-640-11	RES, VAR, CARBON 20K/20K			

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-556-167-00	CORD, CONNECTION
*1-558-452-11	CORD (WITH CONNECTOR)
*3-310-669-01	(US, E, G-AEP)..LABEL, MODEL NUMBER
*3-310-678-01	(Canadian)..... LABEL, MODEL NUMBER
*3-703-591-02	(G-AEP).....LABEL, FTZ
*3-764-386-11	INSTRUCTION
3-794-669-11	INSTRUCTION, CAUTION
1-532-677-00	FUSE, GLASS TUBE (10A)
3-310-656-01	TAPE, MAGIC
3-310-658-01	TAPE (B), MAGIC
*3-671-893-00	CLAMP (LOW TYPE)
3-701-613-00	BAG, POLYETHYLENE
3-701-626-00	BAG, POLYETHYLENE
3-760-974-11	(Canadian, E, G-AEP)...MANUAL, INSTRUCTION
3-760-974-21	(US).....MANUAL, INSTRUCTION
X-3310-601-1	SCREW ASSY, FITTING

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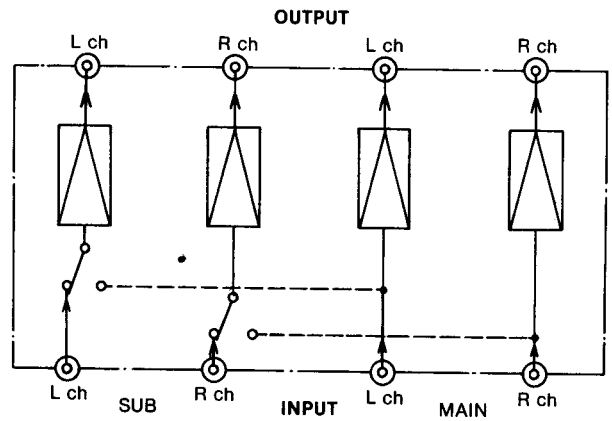
BEFORE CONNECTION

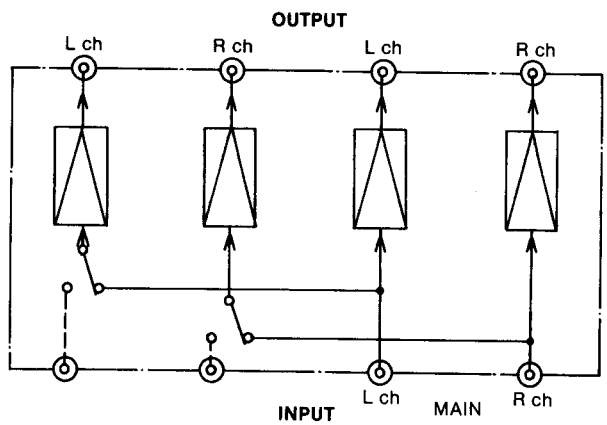
- When a car stereo equipped with one output connecting cord is used for the 4-speaker system, connect the cord to the MAIN input jacks of the XM-600.
  The MAIN input signal is automatically sent to the MAIN and SUB output jacks, as shown in the block diagram [B].
  The sound will then be heard through both the main and sub speaker systems.
- The levels of the MAIN speaker system and SUB speaker system can be adjusted with the LEVEL ADJ controls also when connecting the output connecting cord of the car stereo only to the MAIN input jacks of the XM-600.

BLOCK DIAGRAM

[A] When the MAIN and SUB input jacks are used.



[B] When only the MAIN input jacks are used.



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